

Eruption of flood basalt sequences in Deccan Volcanic Province

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Mapping of Deccan Volcanic Province by interpreting remotely sensed data and field techniques has suggested that flood basalt sequences have erupted through three distinct modes. The sequence comprising mainly acidic flows and volcanic breccia, exposed between present day mean sea level to 300 m height are enclosed within a semicircle, encompassing southern Saurashtra and western Maharashtra have largely erupted through the E-W trending fissure zones which are affected by trans-slip movements. Evidences of explosive volcanism and tectonic deformation is commonly seen within this sequence.

Predominantly compound flow sequence exposed between 200 m to 800 m levels are profusely dotted with the remnants of the lava tubes, appears to have flowed through the central type of volcanic vents. The remnants of lava tubes are identified by their characteristic sinuous shapes and positive relief, wherein the tubular outline composed of baked and reddened fragmentary material encases dark grayish basalt having unique textures. The E-W trending long axes of these remnants and other evidences suggest that lavas have travelled for long distances from W to E direction.

The upper level, 800 m and above comprising simple flow sequence exposed in Western Ghats and Satpura ranges and transected by innumerable dykes are believed to have got emplaced by a system of feeder dykes.